

I CLAIM:

1. A connector for tubing comprising:

a) a central body, said central body having a longitudinal axis extending from a first end to a second end thereof and comprising first and second cooperating members;

b) an expansion mechanism, said expansion mechanism operatively associated with said central body for selectively moving said first and second cooperating members transverse to the longitudinal axis of said central body; and

c) at least first and second wedge members, said wedge members surrounding said central body in an equidistant manner and resting thereagainst from about said first end to said second end so that when said first and second cooperating members are caused to be moved apart by said expansion mechanism, said wedge members will be urged outwardly from said central body along the longitudinal axis thereof to engage the interior of a tube to be connected.

2. A connector as in claim 1 and further including:

a) third and fourth wedge members.

3. A connector as in claim 1 and further including:

a) a retaining member, said retaining member operatively associated with each of said wedge members to maintain each of said wedge members in contact against said central body.

4. A connector as in claim 1 and further including:

a) a recessed channel, said recessed channel extending into each of said wedge members and in a direction transverse to the longitudinal axis thereof, said retaining member received in said recessed channel.

5. A connector as in claim 3 and wherein said retainer member comprises at least one elastic O-ring.

6. A connector as in claim 1 and wherein said central body including four exterior surfaces and a generally square cross-sectional configuration, each of said first and second cooperating members including two of said four exterior surfaces.

7. A connector as in claim 2 and wherein each of said wedge members have a generally triangular cross-sectional shape so that said connector has a generally square cross-sectional configuration.

8. A connector as in claim 1 and wherein said expansion mechanism comprises at least one screw operatively associated with a threaded bore, said threaded bore extending continuously through said first cooperating member and into said second cooperating member.

9. A connector as in claim 8 and wherein said wedge members lying against said central body first cooperating member

having a clearance region extending therethrough, said at least one screw adapted to extend through said clearance region.

10. A connector as in claim 8 and wherein said at least one screw having a length such that said at least one screw is adapted to extend through the wall of a tube to be connected.

11. A connector as in claim 1 and wherein said wedge members are coextensive with said first and second cooperating members.

12. A connector as in claim 1 and wherein said wedge members have a length substantially the same as the length of said first and second cooperating members.

13. A connector as in claim 6 and wherein said four exterior surfaces are cam surfaces.

14. A structural member comprising:

a) a first length of square tubing, said first length of square tubing having an interior surface, an exterior surface, a first end, a second end and an opening extending from said interior surface to said exterior surface thereof for receiving a first expansion mechanism;

b) a second length of square tubing, said second length of square tubing having an interior surface, an exterior surface, a first end, a second end and an opening extending from said

interior surface to said exterior surface thereof to receiving a second expansion mechanism; and

c) a connector adapted to be received within each of said first and second lengths of square tubing to interconnect the same, said connector comprising a central body having a longitudinal axis extending from a first end to a second end thereof and comprising first and second cooperating members, first and second expansion mechanism operatively associated with said central body at opposite ends thereof, said first and second expansion mechanisms for selectively moving said first and second cooperating members transverse to the longitudinal axis of said central body, at least first, second, third and fourth wedge members, said wedge members surrounding said central body in an equidistant manner and resting thereagainst from about said first end to said second end so that when said first and second cooperating members are moved thereapart by said expansion mechanism said wedge members are urged outwardly from said central body and along the longitudinal axis thereof to uniformly engage said interior surfaces of said first and second lengths of said square tubing of a tube to interconnect the same.

15. A structural member as in claim 14 and further including:

a) two retaining members, each of said retaining members operatively associated with said wedge members to maintain said wedge members in contact against said central body.

16. A structural member as in claim 14 and wherein said central body having four exterior cam surfaces and a generally square cross-sectional configuration, each of said first and second cooperating members including two of said four exterior cam surfaces.

17. A structural member as in claim 14 and wherein each of said wedge members has a generally triangular cross-sectional shape so that said connector has a generally square cross-sectional configuration.

18. A structural member as in claim 14 and wherein each of said first and second expansion mechanisms comprise at least one screw operatively associated with a threaded bore, said threaded bore extending continuously through said first cooperating member and into said second cooperating member, said at least one screw member adapted to be received within one of said openings of said first and second and second lengths of square tubing.

19. A structural member as in claim 18 and wherein said at least one screw having a length such that said at least one screw is adapted to extend through one of said openings of said first and second lengths of square tubing.

20. A structural member as in claim 14 and wherein said wedge members are coextensive with said first and second cooperating members.